CLAIMS

What is claimed is:

1. Computer-readable media tangibly embodying a key-caching program executable on a computer and operating on a packet received from an external source, the computer including a system memory and a cache, the system memory and the cache including entries for source addresses and corresponding keys, the packet including a header that is not encrypted and a body that is encrypted, the key-caching program comprising code for:

extracting from the header a source address;

determining whether the source address is included in an entry in the cache;

when the source address is included in an entry of the cache, authorizing an acknowledgment signal for the external source, extracting from the entry of the cache a key corresponding to the source address, and using the key to decrypt the body of the packet;

when the source address is not included in an entry of the cache, determining whether the source address is included in an entry of the system memory; and

when the source address is not included in an entry of the cache and the source address is included in an entry of the system memory, extracting from the entry of the system memory a key corresponding to the source address, and storing the source address and the key as a new entry in the cache.

2. Computer-readable media as claimed in claim 1, wherein the key-caching program further comprises code to effect:

when the source address is not included in an entry of the cache, dropping the packet.

3. Computer-readable media as claimed in claim 1, wherein the key-caching program further comprises code to effect:

when the source address is not included in an entry of the cache, authorizing an acknowledgment signal for the external source; and

when the source address is not included in an entry of the cache and the source address is included in an entry of the system memory, using the key to decrypt the body of the packet.

4. Computer-readable media as claimed in claim 1, wherein the cache includes fast memory.

5. Computer-readable media as claimed in claim 2, wherein the cache includes fast memory.

6. Computer-readable media as claimed in claim 3, wherein the cache includes fast memory.

7. A key-caching system for operation on a packet received from an external source, the packet comprising a header that is not encrypted and a body that is encrypted, the key-caching system comprising:

a system memory,

a networking unit, the networking unit including a cache, the system memory and the cache including entries for source addresses and corresponding keys

a processor, the system memory including a key-caching program that is executable on the processor, and

a controller, the controller effecting communication and data transfer between the system memory, the networking unit and the processor, wherein the key-caching program comprising code to effect:

extracting from the header a source address;

determining whether the source address is included in an entry in the cache;

when the source address is included in an entry of the cache, authorizing an acknowledgment signal for the external source, extracting from the entry of the cache a key corresponding to the source address, and using the key to decrypt the body of the packet;

when the source address is not included in an entry of the cache, determining whether the source address is included in an entry of the system memory; and

when the source address is not included in an entry of the cache and the source address is included in an entry of the system memory, extracting from the entry of the system memory a key corresponding to the source address, and storing the source address and the key as a new entry in the cache.

8. A key-caching system as claimed in claim 7, wherein the key-caching program further comprises code to effect:

when the source address is not included in an entry of the cache, dropping the packet.

9. A key-caching system as claimed in claim 7, wherein the key-caching program further comprises code to effect:

when the source address is not included in an entry of the cache, authorizing an acknowledgment signal for the external source; and

when the source address is not included in an entry of the cache and the source address is included in an entry of the system memory, using the key to decrypt the body of the packet.

10. A key-caching system as claimed in claim 7, wherein the cache includes fast memory.

11. A key-caching system as claimed in claim 8, wherein the cache includes fast memory.

12. A key-caching system as claimed in claim 9, wherein the cache includes fast memory.

13. A method of key caching with a system memory and a cache, the system memory and the cache including entries for source addresses and corresponding keys, the method comprising:

receiving a packet from an external source, the packet including a header that is not encrypted and a body that is encrypted;

extracting from the header a source address;

determining whether the source address is included in an entry in the cache;

when the source address is included in an entry of the cache, authorizing an acknowledgment signal for the external source, extracting from the entry of the cache a key corresponding to the source address, and using the key to decrypt the body of the packet;

when the source address is not included in an entry of the cache, determining whether the source address is included in an entry of the system memory; and

when the source address is not included in an entry of the cache and the source address is included in an entry of the system memory, extracting from the entry of the system memory a

key corresponding to the source address, and storing the source address and the key as a new entry in the cache.

14. A method of key caching as claimed in claim 13, further comprising:

when the source address is not included in an entry of the cache, dropping the packet.

15. A method of key caching as claimed in claim 13, further comprising:

when the source address is not included in an entry of the cache, authorizing an acknowledgment signal for the external source; and

when the source address is not included in an entry of the cache and the source address is included in an entry of the system memory, using the key to decrypt the body of the packet.

16. A method of key caching as claimed in claim 13, wherein the cache includes fast memory.

17. A method of key caching as claimed in claim 14, wherein the cache includes fast memory.

18. A method of key caching as claimed in claim 15, wherein the cache includes fast memory.